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OF THE

Pan-Pacific Research Institution

A Periodical Record of Investigations Bearing on Problems of Food Production, Distribution, Conservation and Consumption, as well as on Public Health, and Race and Population Problems as Related to the Countries Bordering on the Pacific.

Digest of Resolutions of Scientific Interest Passed and Recommendations Made at Conferences Called by the Pan-Pacific Union.

The First Pan-Pacific Science Congress, Honolulu, August, 1920 - - - - - - - - - - 3
The First Pan-Pacific Educational Conference, Honolulu, August, 1921 - - - - - - - - - - 8
The First Pan-Pacific Press Congress, Honolulu, November, 1921 - - - - - - - - - - - - 10
The First Pan-Pacific Commercial Congress, Honolulu, November, 1922 - - - - - - - - - 10
The First Pan-Pacific Food Conservation Congress, Honolulu, August, 1924 - - - - - - - 11
The Pan-Pacific Fisheries Conference, Honolulu, October, 1925 - - - - - - - - - - 15
Some Future Pan-Pacific Conferences called by the Pan-Pacific Union - - - - - - - - - 16

AT PRESENT PUBLISHED QUARTERLY AT HONOLULU, HAWAII
BY THE
PAN-PACIFIC UNION

More frequent publication as acceptable material is contributed.

At the Pan-Pacific Research Institution

The Pan-Pacific Research Institution, an outgrowth of the First Pan-Pacific Food Conservation Conference, is developing into an organization of actual and active research workers interested in the economic problems of food, transportation, and population throughout the Pacific area.

For the local work and service in Honolulu, spacious grounds and buildings have been set aside by the Pan-Pacific Union (through the generosity of the Castle family). These buildings in Manoa Valley can conveniently house some forty visiting scientists, and it is proposed that research workers from every part of the Pacific will be invited to make their home here while pursuing research work in Hawaii.

The Union has entertained at the Institution a number of distinguished scientists from Australia, New Zealand, Canada, the United States, China, Korea, and Japan. Small Pan-Pacific conferences of leading men in many lines of thought and action it is hoped will gather at the Institution in Honolulu as guests of the Union. Here they may live, work, and plan together. Here the First Pan-Pacific Fisheries Conference was held with Dr. David Starr Jordan as chairman and resident at the Institution for some months, in close conference with ichthyologists from every part of the Pacific. Out of this conference has grown a work undertaken by the Institution of publishing in its Journal check lists of the fish of every Pacific country, these to be bound together finally in a single volume containing a check list of the fish of the Pacific.

Councils of the Pan-Pacific Research Institution are at work on check lists in the several Pacific lands and islands of the indigenous trees and plants as well as of their natural enemies and the parasites that destroy these injurious insects, these check lists to be published from time to time in the Journal of the Institution.

The cooperation of scientists engaged in research work in any part of the Pacific is solicited, and a cordial invitation is extended to those attacking the problems of food production and distribution to visit the Institution buildings in Honolulu as guests.

It is hoped that cooperating councils of the Institution may be established in each and every Pacific land. Those already appointed in Hawaii are:

Aquatic Resources Council, Dr. David Starr Jordan, chairman.

Plant Constituent Council, Dr. Nils P. Larsen, chairman.

Crop Development Council, Prof. F. G. Krauss, chairman.

Race and Population Study Council, Kilmer O. Moe, chairman.

Health and Sanitation Council, Dr. C. B. Cooper, chairman.

Pan-Pacific Botanic Garden Council, Willis T. Pope, chairman.

Animal Husbandry Council, Prof. L. A. Henke, chairman.

Meteorological and Topographical Council, E. A. Beals, chairman.

Legislative Council, Col. F. M. Brown, chairman.

Entomological Council, Prof. J. F. Illingworth, chairman.

A limited number of students are accepted at the Institution, a building on the grounds being set aside for their occupancy, the Union financing their tuition, they giving certain hours as helpers at the Institution.

The first number of the Journal contained a "Check-list of the Fish of Hawaii" by Dr. David Starr Jordan and Dr. Barton Warren Evermann; the second, a list of the "Institutes for Research Work in the Interest of Agriculture in the Netherlands Indies," by Dr. P. J. S. Cramer; the third number, a list of "Institutions for Research Work in the Territory of Hawaii." The next number will contain a "Check-List of the Fish of Fiji," by Gilbert P. Whitley of the Australian Museum, Sydney, and a similar list of the fish of New Zealand prepared by W. J. Phillipps, F. L. S., Dominion Museum, Wellington.

Resolutions and Recommendations of the First Pan-Pacific Science Congress Called by The Pan-Pacific Union and Held in Honolulu in August, 1920

The Pan-Pacific Union received a charter in 1917, has called and financed a number of conferences of leading men in various lines of thought and action in the Pacific area. In 1920 the Union called a first Pan-Pacific Scientific Congress, which was held in Honolulu in August of that year. The Congress of the United States appropriated $9000 to the Pan-Pacific Union, the Territory of Hawaii $6000 this year for the expenses of its commercial and educational conferences, of which the scientific conference was one. Other Pan-Pacific countries made smaller appropriations to the Pan-Pacific Union for the carrying on of this work.

In 1920 the Honorable C. J. McCarthy, Governor of Hawaii, was President of the Pan-Pacific Union and issued the invitations to the conferences as President of the Union, the State Department of the United States transmitting these to the foreign governments. The President of the Pan-Pacific Union appointed several committees prior to the conferences, one of these on the publication of proceedings of the Pan-Pacific Science Conference had as its chairman Dr. A. L. Dean, President of the University of Hawaii. As an introduction to the first issue of Part I on Organization, Proceedings and Resolutions of the First Pan-Pacific Science Conference, appeared the following paragraph:

"The Scientific Conference was the first of a series of conferences to be held in Honolulu under the auspices of the Pan-Pacific Union. The purpose of the Conference was to outline the scientific problems of the Pacific Ocean region and suggest methods for their solution. The Conference undertook to take stock of our present knowledge of the Pacific area, its geography and geology, its plants and animals and the races of men which inhabit it, and proceeding from this comprehensive view to formulate the programs for future research."

At the First Pan-Pacific Science Congress called by the Pan-Pacific Union, omitting preambles the following resolutions were adopted on the subject of future conferences:

Resolved, That future similar conferences should be held at intervals of not over three years.

Resolved, That the attention of the Governor of Hawaii be called to the great opportunity afforded by an organization designed for the advancement of the common interests of the Pacific, including scientific research, and to the desirability of taking action which may lead to the development of such an organization vouched for and supported by the various Pacific countries.

Resolved, That it is the desire of this Conference that any agency created for the guidance of scientific research and exploration in the Pacific region may be affiliated with the Council and with the various National Research Councils of the nations of the Pacific.

Resolved, That the members of this Conference unite in inviting the attention of governments to the desirability of providing vessels for suitably planned expeditions.

It was recommended:

(a) That in order that young men may enter upon scientific careers without sacrificing all hope of reasonable financial returns, the compensation for instruction and for research in science be increased so that all can at least be assured of a comfortable living for themselves and their families, and that men of exceptional attainments may receive financial rewards which shall approximate those which their powers could command if directed to commercial ends.

(b) That persistent efforts be made to

inform the public of the progress of science and of its bearings upon the practical affairs of life.

(c) That to enlarge the experience and vision of the instructors in the colleges and universities of the Pacific countries, making them thereby more competent and inspiring teachers, the exchange of teachers between institutions in different countries be encouraged and made possible.

(d) That a clearing house of information relative to opportunities for scientific study and research in the Pacific area be established.

(e) That arrangements be perfected between the universities and other research institutions whereby properly qualified students may move from institution to institution carrying on their work at the place or places where the best facilities are available for the special kind of work upon which each may be engaged.

(f) That a considerable number of fellowships, with adequate stipends, be provided, which shall be looked upon as compensation for the faithful performance of scientific work, and that especially able work by young investigators be rewarded by substantial prizes.

(g) That to stimulate interest in the Pacific and inculcate a knowledge of its importance and unity, text books be prepared in which proper emphasis will be placed upon the Pacific area, its physical features, peoples, fauna, flora, resources, and trade, and that the schools in Pacific countries be encouraged to give instruction which will stimulate the interest and enthusiasm of young students in the objects and phenomena of their environment.

In Anthropology a resolution was passed commending Mr. Bayard Dominick for services, and it was recommended that the most prompt and efficient steps be taken to record the data necessary to the understanding of man's development in the Pacific area.

It was further recommended that centers be created for the study of anthropology and original research therein, such centers to be developed by the expansion of university departments or the alliance of universities with other research institutions with the result that these schools of anthropology shall combine all the essential features of a museum, a research staff, and a graduate school. And, further, because of the peculiar conditions under which anthropological data must be gathered, necessitating both intensive field work in circumscribed areas extending over several years, and intensive synthetic work by men who are masters in many fields, thus requiring a number of men through a period of years, we therefore recommend the establishment of research fellowships in Polynesian anthropology, such endowments being provided that these fellowships will attract the best men available and provide for uninterrupted work during an adequate number of years.

In Biological Science it was

Resolved:

(a) That the First Pan-Pacific Scientific Conference recommends that the governments of the several nations bordering on the Pacific Ocean cooperate, through their several agencies concerned in surveying and charting the sea, toward the collection, compilation and publication of data relating to the topography of the bottom, and the temperature, salinity, acidity, currents, and other physical and chemical properties of the waters of this ocean, fundamental to biological research and the improvement and conservation of the fisheries.

(b) That the Conference recommends that a comprehensive systematic biological survey of the Pacific Ocean and its contained islands be undertaken, with special reference to the economic fisheries problems and that the investigation be carried on in so far as possible through existing agencies, such agencies to be provided with the additional apparatus and facilities necessary, the investigation to be carried on under such cooperation as will prevent duplication of effort.

(c) That the Conference recommends that the several museums, biological stations, and other institutions engaged in biological investigations relating to the Pacific Ocean, associate themselves for the purpose of exchanging information concerning past, current, and proposed investigations, the exchange of facilities and personnel, the coordination of work, and the prevention of duplication in their respective activities. It is further recommended that a survey be made of the facilities afforded by the several institutions, said survey to cover material, equipment, environment, and the personal qualifications of the respective staffs for supplying special information and working up material. It is further recommended that the National Research Council of Washington, D. C., be invited to undertake or arrange for such survey and that a committee of this Conference be appointed to represent the interests of the botanical and zoological sections in this regard, the committee to be appointed by the chairman of the Conference.

(d) That the Conference recommends that systematic statistics of the fisheries be collected and published annually and that such

statistics be, as far as possible, uniform in character and in such detail as to methods of fishing administration and conservation. It is further recommended that the several governments provide for a joint commission for the arrangement of the details of such statistical compilations.

The following recommendations were made (investigations in Marine Biology):

(a) The collection of bottom samples from depths under 20 fathoms, since these are not usually obtained by deep sea expeditions and can be readily obtained at anchorage by simple apparatus.

(b) The study of the brachiopod faunas above the 1000 fathom line inasmuch as a knowledge of these Brachiopods supplies important evidence on the question of former land connections.

(c) A systematic and thorough study of Pacific Ocean algae and of the conditions under which they occur and of the part they play in their environment; this could be obtained by means already employed for certain parts of the Pacific Ocean and would be of great scientific value.

(d) Because the Hawaiian Islands lie on the margin of the tropical seas, and therefore occupy a critical position for the study of the ecology of marine organisms, among which corals are important; and because data obtained from ecologic investigations in this locality would be of value to geologists in interpreting the conditions under which fossil faunas lived, the Conference recommends a careful study of the ecology of the marine organisms of the Hawaiian Islands, and particularly a study of the corals and of the organisms associated with the corals on the reefs; with further recommendations in regard to land fauna:

(a) That surveys, as complete as possible, be made of the land fauna, especially of those smaller islands in which the native fauna is fast disappearing, or is likely to become extinct in the near future.

(b) That the attention of zoologists be called to recently made land areas due to volcanic or other activity and the importance of the study of ecological development with special reference to the appearance of animal life upon such areas.

(c) That since land mollusks supply information of value in zoogeographical researches, material for a comparative study of the anatomy of the soft parts of land snails be obtained from all the high islands of Polynesia, Micronesia, and Melanesia, and that adequate faunistic collections be made on islands the faunas of which are not at all or only partially known.

And recommendations as to collecting of Polynesian land flora:

(a) That botanical exploration of Polynesia be extended as rapidly as possible in order to assemble comprehensive collections with as complete notes as possible covering the scientific and economic aspects of Polynesian botany.

(b) That this work of exploration be carried on by existing agencies, by special botanical expeditions, and by heads of non-botanical expeditions employing and supervising native collectors, whenever feasible, for the collection and preservation of botanical material.

(c) That material be collected in bulk, from ten to fifteen specimens of each species, with the object of distributing duplicate specimens to Pacific institutions and to the larger botanical centers of the world.

And a recommendation that studies be made of the stages of ecological development with special reference to the appearance of forms of plant life on new volcanic deposits following an eruption; and also of plants best suited to the speedy rehabilitation for agricultural uses of regions covered by such

volcanic ejecta; and of the resistance of plants to volcanic fumes.

In the Geography Section while no resolutions were passed or recommendations filed, a strong desire was expressed that local topographic maps in all Pacific areas be prepared. It was stated that the benefits derived from adequate topographic maps are far greater than their cost and this Conference urges that a plan be made for carrying on a topographic survey of the lands of the Pacific regions, and that this plan be designed to give uniformity of results. This Conference commends the countries of the Pacific region for the work already done by them.

A general hydrographic survey of the continental shelves extending offshore to the one-thousand fathom curve and of the island platforms should be executed, in order to supply basic data essential to all research work involved in the general scientific exploration of the Pacific ocean.

This survey should establish a system of horizontal and vertical control, determine the shore line and adjacent topographic features in true geographic position, develop submarine relief, collect and describe the materials of the bottom, observe temperature and salinity, and define vertical and horizontal movements of the water. The hydrographic bureaus of the nations of the Pacific, as now organized and operating, need only to expand their equipment and extend their field to meet the requirements of this project. Closer cooperation is desirable in the interest of uniformity and to avoid duplication.

This Conference commends the use of wireless telegraphy for the improvement of determination of the longitude of the islands in the Pacific.

This Conference hopes that plans may be made for a complete magnetic survey of the Pacific region and that the work may be expedited.

This Conference feels that a systematic oceanographic investigation of the Pacific should be undertaken as soon as possible. The plan adopted should be designed to complete the survey of the most critical areas at an early date, and eventually of the whole Pacific region.

The First Pan-Pacific Scientific Conference commends the ocean navigation companies and their masters of vessels for the valuable assistance they have rendered the meteorological services of several stations and urges them further to cooperate especially in the matter of transmitting their weather reports by radiograph as well as by mail.

This Conference urges, in the interest of geophysical and other sciences, the early reduction of existing geodetic data and the extension of geodetic field work to those regions of the Pacific where such data are now lacking.

In the section on Geology it was

Resolved, That the following maps of the Pacific region on the international scale of 1:1,000,000 be completed as expeditiously as possible:

(a) A base map showing by contours or hachures as many topographic features as practicable.

(b) A map showing geological formations or groups of geological formations.

(c) A map showing mineral resources.

Resolved, That it is desirable to have a careful study of Easter Island to determine the character and geologic age of the rocks composing that island.

Resolved, That this Conference strongly recommends that a geological survey of the Hawaiian Islands be made and that appropriate geological maps and descriptive texts be published.

Resolved, That a topographic and geological survey of the several small islands, such as Mango, Thithia, Lakemba, Vanua Mbalavu, and Tuvutha be made at the earliest opportunity, and the results published.

Resolved:

(a) That the configuration of the bottom of the Pacific Ocean be determined with adequate accuracy.

(b) That charts of the littoral and sublittoral zones be made in all practicable detail; for example, where possible these charts

should be on scales ranging between 1:10,000 and 1:40,000.

Resolved:

(a) That in addition to the study of the post-cretaceous stratigraphy and paleontology of the Pacific islands and of the land areas on the margins of the Pacific Ocean, such work also be expedited in the Caribbean region and in the region from Burma through the Himalayas to the Mediterranean sea.

(b) That inventories of the living fauna and flora of the Pacific region be prepared at the earliest practicable date.

Resolved:

(a) That geologists, geographers, seismologists, biologists, and others who are interested in the facts of form within the Pacific Ocean and along its margins devote attention to the study of physiographic processes and the forms resultant from such processes.

(b) That geologists and physiographers make special study of the physical, chemical, and other properties of igneous and sedimentary rocks so as to ascertain the difference in their resistance to erosive agents.

(c) That efforts be made to obtain assistance in furthering the study of wave and current erosion, the factors limiting wave base, the action of weathering and corrosive agents at the headwaters of streams, the forms of stream channels, the form of sea cliffs at different stages of development, the action of plants in retarding land erosion, and the sequential stages of erosion of fault scarps.

Resolved:

(a) That geologists, oceanographers, geographers, biologists, and others who may be interested devote as much attention as possible to the study of modern sediments and the processes by which they are formed.

(b) That geologists make special studies of the physical, chemical, and other properties of sedimentary rocks to ascertain the conditions under which the deposits were formed and the changes that may have taken place in such sedimentary rocks after deposition.

(c) That all existing agencies be urged to study the phenomena referred to in paragraphs (a) and (b) above, and that efforts be made to increase the number of agencies for the prosecution of such investigations.

Resolved, That steps be taken to advise in the planning of research, to correlate the efforts of the different workers, and to promote in such ways as may be proper a uniform mode of publication of results.

It was recommended that the present volcano observatories be continued and new permanent volcano observatories be established in lands about the Pacific; and recommends that such a station for maintenance and publication of continuous observations should be placed on one or more active volcanoes in each important volcanic district.

It was recommended that prompt and authoritative publication of current facts and measurements concerning volcanoes, earthquakes, submarine eruptions, and tidal waves be an essential part of the routine of all Pacific observatories.

It was recommended that precise leveling and triangulation be carried on at definite time intervals, in selected seismic and volcanic districts, in order to ascertain precursory and other changes in underground stress accompanying great seismic and volcanic disturbances.

It was recommended that each Pacific country publish statistical lists of local eruptions, earthquakes, tidal waves, and other related phenomena; and issue catalogues of active, dormant and extinct volcanoes, and of local seismic features.

It was recommended that the establishment of a central bureau for dissemination of scientific knowledge among the volcano and earthquake stations of the Pacific.

It was recommended that countries liable to seismic disaster educate the people in proper methods of construction, in behavior during emergencies, and in the history of such catastrophies elsewhere.

A number of copies of the resolutions in full passed at this conference, with preambles and notes, are in the library of the Pan-Pacific Union in Honolulu and may be had by scientific bodies desiring them.

Resolutions and Findings of the First Pan-Pacific Educational Conference Called by the Pan-Pacific Union and Held in Honolulu, August 11-24, 1921

Resolved, That this Conference recommends that the Pan-Pacific Union establish an Educational Council, as a permanent department of the Union, under such conditions of organization and with such powers and purposes as the Pan-Pacific Union may, permanently or from time to time delegate to this educational council.

As suggestions of the possible fields of work of this educational council, the following items might serve as illustrations:

1. To offer a coordinating agency which shall take the initiative and stimulate education to common ends in the various Pacific nations.

2. To arrange future educational conferences and so to plan and organize the work, that it may be systematically carried out during the interims.

3. To stimulate various lines of scientific investigation and education leading to assistance of common interests in commerce, economics, social and political understandings of the various nations.

4. To establish in Honolulu a library containing complete files of official reports, books, and other data concerning the Pacific which can be made available and serviceable when and where needed; and to issue references to all current literature bearing upon problems of the Pacific.

5. To obtain from the various Pacific nations the data of history, geography, science, of institutions and customs, in the form of manuscripts prepared authoritatively, books and other publications, pictures, films, articles prepared by special writers, etc.; to assist in vitalizing these materials and preserving them from becoming useless lumber of the school room.

6. To undertake either directly or indirectly through cooperation of universities and other institutions of research, a thorough scientific investigation of the causes of war and to assist educational machinery in the various nations to remove causes which may contribute to war making.

7. To provide for exchange of teachers especially in fields of specialization, and to facilitate the means of traveling by teachers in order that the schools may reap the benefit of such intercourse.

8. To provide for exchange of successful teaching methods especially in the field of foreign language instruction.

We commend the plan of the Pan-Pacific Union to erect in Honolulu a Pan-Pacific building containing if possible a Greek theater, auditorium halls, commercial museum and art gallery, etc., to serve as a permanent home, repository and international experiment station in the problems of the Pacific and which would serve to give continuity and stability to the successive Pan-Pacific Union Conferences which have been held and will be held.

The Conference made the following recommendations:

(1) That there be incorporated in the educational programs of Pacific nations definite teaching inculcating the ideals of peace, and the desirability of the settlement of international disputes by means other than war.

(2) That scientific research into the causes of war should be promoted by governments and educational agencies.

(3) That a Pan-Pacific conference be held for the purpose of organizing a scientific survey of the population problem of the Pacific.

(4) That all possible educational agencies and especially the subjects of History, Civics, Economics and Geography be utilized to eliminate racial prejudice and antagonism, and to promote better understanding and cooperation among the peoples of the Pacific.

(5) That the governments of Pacific peoples make adequate provision in their university systems for the scientific study of Pacific problems and for the dissemination of such knowledge among their respective communities.

(6) That the Pan-Pacific Union institute machinery for the purpose of acquiring a body of authoritative knowledge for the practical furtherance of those ideals of racial inter-knowledge,

amity, and cooperation which are its main objectives.

(7) That the educational authorities of Pacific nations provide facilities for the inter-change of students and teachers, and that where such system has already been instituted it be further encouraged and developed.

(8) That the governments of Pacific nations be asked to promote the production of educational films showing the resources, industries, and general social conditions of their respective countries, and to provide adequate means for prohibiting misrepresentation of other nations through the use of moving pictures.

(9) That the Roman alphabet should be adopted in all Pacific countries.

(10) That there should be instituted by the forthcoming World's Press Congress a Pan-Pacific branch commissioned to promote by medium of the press inter-racial understanding and cooperation throughout the Pacific.

(11) That inasmuch as the growing unity of the world must ultimately embody itself in some form of supernational world-order endowed with effective powers to safeguard the peace of the world and the ideals of humanity, educational effort should be coordinated throughout all Pacific lands to make this great ideal a definite part of the national consciousness.

The following is the report of the Executive Committee on Organization and Procedure of the First Pan-Pacific Educational Conference, Honolulu.

This Conference is called by the Pan-Pacific Union as the second in a series of conferences which it proposes to hold. The Pan-Pacific Union invited the United States Commissioner of Education to organize this Conference, to arrange its program, to invite the nations of the Pacific to participate and to preside at its sessions. This invitation was accepted by the Commissioner of Education and the responsibilities assumed.

In consequence of the Commissioner's activities, through the Secretary of the Interior and the Department of State, in due course, invitations to send delegates to this Conference and to participate in the discussions went forward to the governments of all the countries and self-governing colonies on the Pacific Ocean.

During these preliminaries a change was made in the office of the Commissioner of Education, Dr. Claxton, who had carried forward the plans for this Conference nearly to completion, retiring, to be succeeded by Dr. Tigert. It came about, in consequence, that much to their regret, neither the old nor the new Commissioner could attend.

Exercising, however, the authority delegated to him, the Commissioner detailed Dr. David Starr Jordan to preside in his stead. This explains, if any explanation is needed, Dr. Jordan's presence here as the presiding officer of this Conference.

The conference was opened with the reading of a letter from President Harding.

Note.—A Pan-Pacific Educational, Conservation and Recreation conferences have long been planned by the Pan-Pacific Union. The U. S. Government has authorized such conferences to be called by the President of the United States convening in Honolulu in the spring of 1927. The Commissioner of Education, Dr. Tigert, the head of the U. S. Conservation Service, Edwood Mead and the head of the Recreation Service, Stephen P. Mather, have taken the leading part in promoting the calling of such conferences. These will be entirely under the U. S. Government.

Resolutions Passed at the First Pan-Pacific Press Congress (a Section of the Press Congress of the World) Called by the Pan-Pacific Union and Held in Honolulu, November, 1921

At the First Pan-Pacific Press Conference, held in Honolulu, the resolutions were passed commending:

1. The organization of a permanent Pan-Pacific Press Conference body;

2. Electrical News Service in and about the Pacific;

3. Defining the scope of the activities of the Pan-Pacific Press Conference;

4. Endorsing the Conference to Limit Armaments and to consider the problems of the Pacific and the Far East.

Resolved, That the members of the Pan-Pacific Press Congress pledge themselves to urge upon their respective governments the extreme desirability of abolishing the requirement for passports between Pacific countries; and, if such course shall, in any case, be found inadvisable for the present, that the regulations concerning the same be simplified so far as practicable; and further, that charges in connection with the issuance of such passports be limited to the original fee paid at the time of issue.

Resolutions Passed at the First Pan-Pacific Commercial Congress, Called by the Pan-Pacific Union and Held in Honolulu in November, 1922

The following are the resolutions passed at the First Pan-Pacific Commercial Conference held in Honolulu under the auspices of the Pan-Pacific Union.

Resolved, That this conference commends the calling by the Pan-Pacific Union of a Pan-Pacific Food Conservation Conference to be held in Honolulu during the summer of 1924.

Resolved, That the appointment of a Pan-Pacific Economic Commission be recommended to the various governments of the countries adjoining the Pacific Ocean, for the purpose of visiting such of the countries as may desire to participate in the said commission, with a view to making a survey of their industrial resources, trade legislations, transportation facilities, means of communication, and such other subjects of a common nature as the commission may thereafter decide.

Resolved, That this Commercial Conference recommends that the governments of the countries bordering on the Pacific enter into correspondence for the scientific study of the biology, physics and chemistry of the Pacific in the interest of the restoration, proper utilization, and conservation of its vanishing natural resources.

Resolved, That the Pan-Pacific Commercial Conference strongly recommends that the various countries bordering on, or interested in, the Pacific, take such steps as may be necessary to bring about an international treaty for the restoration of the vanishing resources of the Pacific to their former abundance, that they may be maintained for all times as the objects of great commercial fisheries of which they are easily capable.

It was urged in connection with the work of the International Commissions recommended

"That the general secretary and requisite staff be appointed by the Pan-Pacific Union for the purpose of centralizing the work of organization and the collection and publication of the reports of the commission."

Resolved, That this Conference express a hope that the governments of the Pacific will appropriate funds to send delegates to the conferences called by the Pan-Pacific Union and to help defray the expenses of calling these conferences and publishing the proceedings.

Resolutions were passed commending
Pan-Pacific Commercial Museums;
Pan-Pacific Chamber of Commerce.
Uniform Currency in the Pacific area;

Pan-Pacific Information Bureau.

Resolved, That this Conference recommends to the Union that it take steps to bring together, into better acquaintance and cooperative efforts, representatives of universities in Pacific lands offering commercial instruction.

Exchange of Educational Films;

The Round the Pacific Cruise of Friendship.

Lower Pan-Pacific Radio Press Rates.

Resolved, By the Commercial Conference of the Pan-Pacific Union that the governments of the respective countries bordering on the Pacific be urged to use their radio facilities and other means of communication, in cooperation with each other or with other agencies, to provide means of intercommunication for the public, whenever and wherever such services cannot be obtained through privately operated agencies, to accomplish the following purposes: (1) the transmission of commercial messages at the usual commercial rates; (2) the transmission of news messages promptly and at the low rates necessary for establishing of regular news reports.

Resolved, That the Pan-Pacific Union be requested to institute a Pan-Pacific Commercial Council with all of the delegates to this Conference as an advisory committee to the Union in connection with the follow-up work of the Conference, and in forwarding other projects of commercial interest in the Pacific area.

Resolutions of the First Pan-Pacific Food Conservation Congress, Called by the Pan-Pacific Union and Held in Honolulu August, 1924

The First Pan-Pacific Food Conservation Conference was held in Honolulu July 31 to August 14, the United States State Department, following usual precedent, transmitting the resolutions of the Pan-Pacific Union to the several Pacific governments. This conference was attended by delegates from every Pacific land, with the exception of some of the most distant Latin-American states. It was the most representative Pan-Pacific gathering ever assembled. Briefly its resolution first expressed its thanks to those responsible for calling the Conference.

It was further resolved, That in the name of science, the Pan-Pacific Food Conservation Conference expresses its hearty thanks to the Pan-Pacific Union for the interest it has taken in promoting scientific work and study in the Pacific, that it urges the Union to continue its efforts in this direction and offers the services of the delegates to this conference to cooperate with the Union and the Pan-Pacific Research Institute as they may be called upon.

Resolved, That the Pan-Pacific Union be urged to continue its efforts to bring together all of the intelligence and information bureaus of Pacific lands into the organization of a Pan-Pacific Information Bureau that may have branches in the larger cities in each Pacific land where accurate and authentic information may be secured concerning each country of the Pacific—its resources, its products, commerce, peoples and transportation facilities.

Resolved, That the officers of the several sections of the First Pan-Pacific Food Conservation Conference, or the committees appointed by such sections, remain as permanent committees of the Pan-Pacific Union, if so requested by the Union.

Resolved, That the Pan-Pacific Union is requested to use its best efforts to bring the resolutions of this Conference before the governments of Pacific lands and before such scientific and other organizations as may be able to assist in carrying such resolutions into effect.

Resolved, That the Pan-Pacific Union be requested to appoint a committee of men versed in international law to form a Pan-Pacific Bar Association which shall advise the Union as to means of securing uniform quarantine and conservation regulations in the Pacific area.

Be it Resolved, That this conference learns with great pleasure of the offer of Messrs. George and Wm. Castle through the Pan-Pacific Union of a valuable estate as the home of a permanent Pan-Pacific Research Institute and that this conference urges the hearty support of this project on the part of the governments, scientific bodies and all others in the Pan-Pacific area. This conference urges that research work in connection with

food production and conservation, on land and sea in the Pacific area be made the chief aim and object of this Institute.

Resolved, That the First Pan-Pacific Food Conservation Conference recommends to the governments of the various circum-Pacific countries and to private individuals and institutions in such countries that statistical data be expressed in units of the metric system in addition to expressing them in units of the local system, and that when this is not done that conversion factors be given with each table or in each publication whereby the local units may be converted into the universally understood units of the metric system.

Be it Resolved, That the First Pan-Pacific Food Conservation Conference recommends to all the governments of the countries bordering the Pacific Ocean whose official language is not English, that they, as members of the Pan-Pacific Union, advise their scientific institutions to supplement their publications, especially those of greatest importance and of a technical nature, with abstracts in English. Likewise that statistical tables, etc., be presented in the metric system.

Be it Resolved, That this conference recommends to the various Pacific nations that all ships, while at sea, transmit regular observations of the weather by radio-telegraph to those national agencies already established for the purpose of issuing forecasts of the weather and warnings of storms; and that the sending of such reports from ships to the nearest land radio-telegraph stations be free of tolls, and handled as ships' business.

Resolved, That in view of the great need for a comprehensive abstract service covering all branches of biological science, this conference commends the efforts of the Union of Biological Societies to secure the cooperation of different organizations devoted to such work, and expresses the hope that the services hitherto rendered by the International Catalogue including the Zoological Record may be continued and expanded to meet modern requirements. This conference strongly urges that adequate funds should be provided to put this service on a secure and permanent basis.

Resolved, That the First Pan-Pacific Food Conservation Conference recommends to the various governments of the countries bordering the Pacific that there be prepared and sent to the organizers of the Pan-Pacific Science Congress to be held in Japan in 1926, a comprehensive list of the individuals, institutions, and agencies engaged in research, extension work, or advanced educational work pertaining to useful products of the sea and of the soil, or those branches of science related thereto (such as: ichthyology, marine biology, oceanography, economic entomology, plant pathology, agronomy, animal husbandry, genetics, agricultural geography, meteorology, agricultural chemistry and agricultural bacteriology); and that this list be supplemented by a brief resume of investigations in the aforesaid branches which have been completed, are now in progress, or are contemplated.

Resolved, That the First Pan-Pacific Food Conservation Conference sends its greetings to the organizers of the Third Pan-Pacific Science Congress to be held in Japan in the autumn of 1926, and wishes them every success.

Resolved, Further, That the First Pan-Pacific Food Conservation Conference forward Pacific Science Congress, copies of the resoto the governing body of the Third Panlutions adopted by the present conference, for the information of the Science Congress, with the hope that such of them as pertain to the field covered by the Science Congress may receive the consideration and endorsement of the latter.

Resolved, That on account of the danger of uncontrolled interchange of sugar cane varieties, this conference recommends to the governments and agencies concerned, that these exchanges be made only under properly constituted scientific control.

Resolved, That in view of the destructive nature of several diseases of sugar cane, introduced into Australia from New Guinea, and the possibility that the cultivation of sugar cane in the tropics originated in that area, the First Pan-Pacific Food Conservation Conference recommends that a survey of the diseases and insect pects of sugar cane and their natural means of control be undertaken in New Guinea at an early date, by the Pacific countries interested in sugar cane cultivation.

Be it Resolved, That in view of the difficulty in interpreting the figures obtained in the chemical control exercised in the sugar industry, it is desirable to adopt a uniform system of reporting data obtained in the manufacture of cane sugar, to the end that the figures reported in one country may be understood in every other cane-producing region.

Whereas, The pollution of many coastal waters, bays, estuaries, harbors and rivers, resulting from the discharge into said waters of oil, ashes, and other contaminating substances by oil tankers, oil consuming motor boats and other craft, and of waste from shore plants of oil companies and industrial

plants of various kinds has become a serious menace to sea birds, surface swimming fish eggs and larvae and the plankton upon which useful species feed, and to the bottom and shore life of our bays and harbors, at the same time rendering our beaches filthy, insanitary and unsightly, therefore be it

Resolved, That the First Pan-Pacific Food Conservation Conference expresses the wish and the hope that the properly constituted authorities in the countries of the Pacific enter into correspondence for the purpose of bringing about an international treaty or agreement under which such pollution may be prohibited.

Resolved, That this Conference recommends to the National Research Councils of America, Australia and Japan through their governments, as well as to the governments of British Malaya, China, Indo-China, the Netherlands Indies, New Zealand, and Siam, that there be initiated as early as possible coordinated investigations into the question of the occurrence and distribution of marine borers as well as into means of combating such organisms.

Be it Resolved, by the Pan-Pacific Food Conservation Conference that prompt action is necessary to save the marine turtles of various countries from commercial, if not actual, extinction, and that all Pacific nations having resources in sea turtles should forthwith take adequate steps to preserve and increase the supply, including the rigid regulation or total prevention of turtle fishing for a term of years and where necessary the absolute prohibition of the gathering of turtle eggs until such time as the increased abundance of turtles would justify the taking of limited numbers of eggs.

Resolved, That the First Pan-Pacific Food Conservation Conference strongly urges that the various maritime countries of the world, particularly those bordering on, or interested in, the Pacific, be invited to send delegates to a convention for the purpose of negotiating an international treaty for the restoration, proper utilization and conservation of the vanishing fur-seal and sea-otter herds and other natural fishery resources of the Pacific; and be it further

Resolved, That this conference recommends that the governments of the countries bordering on the Pacific enter into correspondence for the purpose of establishing an international commission for the scientific study of biology, physics and chemistry of the Pacific in the interest of the restoration, proper utilization and conservation of its vanishing natural resources.

Resolved, That it be a recommendation from the First Pan-Pacific Food Conservation Conference to the various maritime countries of the Pacific area that urgent attention be directed to the study of ocean and coastal currents, and to the working up of data already available, with a view to the elucidation of important problems in navigation and commercial fisheries concerning the countries mentioned.

Whereas, the First Pan-Pacific Food Conservation Conference has considered plans for a coordinated study of the food relationships of marine organisms in the Pacific area; and

Whereas, these plans call for the cooperation of the sciences of physics, chemistry, geology, zoology, botany, physiology and bacteriology, (a) in investigating the role of marine organisms in food production, (b) in promoting the cooperation of biological laboratories and other institutions in furthering such studies, and (c) in arranging the referring of materials collected to taxonomists and other specialists as an aid to the knowledge of the fauna and flora of the Pacific.

Resolved, That this conference expresses its approval of the plans and suggests that the Pan-Pacific Union might give the project its support and might offer its services for the coordination of individuals and institutions engaged in each field.

Whereas, it is of great importance to guard against the losses due to insects and other animal depredators, to plant diseases and to pest plants or weeds, which in all countries greatly diminish the yields of food crops, and

Whereas, the risk of transfer of plant pests from one country to another is increasing vastly under the conditions of modern commerce, and

Whereas, the information as to the occurrence and distribution of such pests within the Pacific area is far from being adequate to form the basis for appropriate restrictions on movement of products necessary to prevent the spread of such enemies,

Resolved, That this conference recommends and approves the appointment of an international crop protection committee or board to promote and coordinate the investigations of such crop enemies and related subjects throughout the Pacific region, and when necessary in other regions such as the West Indies which have close commercial relations with Pacific countries; and that, on recommendation of the crop protection section of the Conference, a committee be designated to organize such work and provide for its support by the countries concerned and for the selection of the said international crop

protection committee, on nominations of one or more members of each country to be made by the proper agencies of such countries. The duties of such international crop protection committee shall be:

(a) To promote surveys throughout the Pacific area for the purpose of acquiring information as promptly as possible concerning both the known and the probable enemies of crops, and also concerning the parasites and other agencies which may be useful in the control of such crop enemies.

(b) To encourage research work necessary for the local control of such enemies, to determine what quarantine action may be warranted, and to develop better methods of inspecting and disinfecting plants and plant products.

(c) To promote the development by each country of larger numbers of trained workers in the general field of plant pest survey and control.

(d) To obtain agreements and understandings between countries as to giving prompt notification of the appearance of any new and destructive pests, and to secure the cooperation of such countries in the prevention of spread of such pests.

Whereas, the excellent economic results that have been gained by the transportation of parasites and other natural enemies of injurious insects from one country to another as in Hawaii, on the mainland of the United States, in Italy, France, New Zealand, Uruguay, Chile, South Africa, the Island of Mauritius, and other places, have fully justified continued and broader work in this direction and therefore larger expenditures of funds by governments and smaller organizations, and

Whereas, the transportation and introduction of such beneficial insects to be successful and free from danger, usually involves technical studies of an enormously complicated chain of interactions of organisms;

Resolved, That this conference urges all governments and organizations undertaking work of this character to provide the most expert scientific supervision for such work, to include skilled biologists trained in the study of parasitic and predatory forms of life and to assist so far as possible in the creation of a much larger number of such trained men by encouraging the study in the higher educational institutions of the very numerous problems of natural control.

Resolved, That governments and institutions be advised to arrange their permanent stations intended for phytopathological and entomological investigations in such a way as to facilitate international exchange of parasites in every possible manner and to afford to the experts of other countries, who may be engaged in exploration work of this character, all possible facilities and assistance.

Resolved, That this conference favors the maintenance and expansion of present biological stations and the establishment where possible of new stations so that each country may have one or more stations equipped to carry on continuous observations upon the fauna and flora, especially with reference to possible movement of crop pests and plant diseases, and where occasional workers may find facilities to assist in investigations in their special fields with expectation that their results may be combined with those of specialists in other fields to secure more comprehensive knowledge of the biological conditions of the whole Pacific region.

Whereas, in all Pacific countries that are subject to plagues of locusts or grass-hoppers, it is highly advisable that accurate scientific surveys be made of lands which may constitute the permanent breeding grounds of these insects; and that, when such permanent breeding grounds are delimited with some degree of certainty, it is important that they be scouted at frequent intervals in order to learn the prospects concerning approaching devastating flights, and in order to begin preventive measures at the earliest moment.

Resolved, That the governments of the Pacific countries be advised to make such surveys and to establish, where possible, in permanent breeding regions, biological stations for the study of the factors in natural control.

Resolved, That where swarms originating from definitely located permanent breeding areas, customarily enter lands controlled by different governments, such governments are urged to establish and to defray the expenses of cooperative commissions charged with the promotion of such procedures as are indicated in the preceding resolution.

Resolved, That this conference suggest to the several governments concerned that quarantine regulations relating to live stock be established in all Pacific countries, and that a joint commission be appointed to promote uniformity in the quarantine regulations of the countries of the Pacific region.

Resolved, That the First Pan-Pacific Food Conservation Conference in consideration of the importance of furthering rice production and improvement in the countries about the Pacific, not alone for the benefits to the countries immediately concerned but in consideration of the food supply of the whole world, recommends that delegates to the Science Congress to be held in Japan in

1926,, come prepared with data to refer to

(1) The areas at present devoted to rice growing and the amount of rice produced;

(2) The relation between production and consumption in each country;

(3) The probable future demands for rice; and

(4) The possibilities of and best methods for increasing production to meet increasing needs.

Resolved, That, in view of the importance of soil surveys and related investigations as the basis for the study of economic and sociological problems as well as problems relating to production of crops, this conference urges that at the Pan-Pacific Science Congress to be held in Japan in 1926, provision be made for the consideration of matters relating to soil survey, classification and mapping, looking to the development of as widely comparable results as possible.

Resolved, That, inasmuch as the sale of rice under designations which are misleading as to the country of origin may be a source of injury to some producing countries, the First Pan-Pacific Food Conservation Conference recommends that rice-producing countries consider seriously the advisability of establishing in each such country official grades and standards for rice which govern the export trade of that country.

Resolved, That the First Pan-Pacific Food Conservation Conference strongly recommends to those nations or dependencies not now publishing crop forecasts or complete and timely statistics of food production and consumption, the publication and dissemination of such data in a form generally and readily available to the world at large.

Resolved, That the First Pan-Pacific Food Conservation Conference strongly recommends to the nations of the Pacific area the formation of an international commission for the following purposes:

(1) The formulation of uniform definitions and standards for food commodities entering into the trade between nations in order that such definitions and standards may receive from the administrative officials of the several nations whatever consideration may be proper in each case.

(2) The preparation, for the consideration of the several law-making agencies, of recommendations which would tend to minimize so far as possible, discrepancies in existing food control legislation.

Resolution Adopted at the Pan-Pacific Fisheries Conference, Honolulu, 1925

David Starr Jordan, Chairman; Chiyomatsu Ishikawa, Vice-chairman; Department Judge Advocate, Col. Frederick M. Brown, Chairman Pan-Pacific Legal Council, Legal Advisor.

Resolved, That the officers of the Pan-Pacific Fisheries Conference present to the Pan-Pacific Union the judgment and wish of this Conference that the Pan-Pacific Union shall place before the governments of the Pacific nations and other governments which may be interested in the protection and conservation of the aquatic resources of the Pacific an urgent request that they participate in convening a Pan-Pacific Fisheries Conference which will have for its object:

(1) The bringing into existence of a Pan-Pacific Economic Commission to study the fisheries problems of the Pacific as they present themselves today and to ascertain the facts relevant to the necessity for international interest, supervision, and control of the aquatic resources of the Pacific; and as such supervision and control may be effectuated only in virtue of international treaties or agreements,

(2) The eventual negotiation by diplomatic means or by a conference of accredited delegates, and the adoption of such international treaties or other international agreements as the work of the Pan-Pacific Economic Commission may indicate to be necessary or advantageous from the point of view of the common welfare of the Pacific nations;

And be it *Further Resolved,* That it is the sense of the Pan-Pacific Conference, 1925,

(1) That any prospective international treaties or agreements ought not to alter, impair or interfere with the regulations now in force in any one or more of the Pacific countries and that the separate work of the game and fisheries departments, bureaus, or commissions ought to continue unaffected by the international activities contemplated by the present Conference; and in the event of the creation of Pan-Pacific Economic Commission, as hereinbefore recommended, proving impracticable for the time at least,

(2) That, upon the request of the Pan-Pacific Union or otherwise, one or more of the Pacific governments ought to call a dip-

lomatic Pan-Pacific Fisheries Conference composed of accredited delegates of all the Pacific nations to negotiate a treaty or devise other means to promote the purposes and objects above mentioned; or ought to foster and promote a non-governmental, Pan-Pacific Fisheries Conference by sending experts and representatives to such a conference, if called by the Pan-Pacific Union.

(3) That the non-governmental Pan-Pacific Fisheries Conference, if convened as just recommended, ought, upon the conclusion of its ordinary work as a conference, to become a permanent body or unofficial commission under the auspices and patronage of the several Pacific governments, even if not an official, international commission; and that its activities should be those of investigating relevant facts and conditions, informing and advising the governments interested and, in general, doing everything within its competence and power to promote a restoration of the vanishing resources of the Pacific, including fishes, crustaceans, mollusks, fur seals, sea otters, and whales to the end that the present yield may be increased and the future made as secure as possible.

(4) That the existing treaties and also the existing local statutes and special agreements, so far as known to this Conference, are advantageous so far as they go and are in no way detrimental to the purposes and objects above mentioned and that the same do not require modification, but ought to be continued and not curtailed nor interfered with; but that the existing treaties and agreements ought to serve as nuclei or initial points of departure to facilitate the accomplishment of a broader and more comprehensive plan for the protection and conservation of the aquatic resources of the Pacific.

Some Future Pan-Pacific Conferences Under the Auspices of the Pan-Pacific Union

The Pan-Pacific Union has placed some of its buildings in Honolulu at the disposal of delegates to Conferences in January, 1927 of a proposed Pan-Pacific Legal Congress and a Conference of the leaders of the League of Nations Societies in Pacific lands. The delegates are invited to remain as guests of the Union before and after the Conference that they may become better acquainted.

Arrangements are being made for the holding of the First Pan-Pacific Polynesian Congress in Honolulu in 1928, during the period of the Captain Cook Sesqui-Centennial celebration in memory of the 150th anniversary of his discovery of Hawaii, January 17, 1778. An ethnological and anthropological section of the conference will be under the direction of leading Pacific scientists who had made a special study of the Polynesians.

A Pan-Pacific Women's Conference has been called by the Union to convene in Honolulu in July, 1928, Jane Addams being honorary chairman.

In 1929 the Pan-Pacific Medical Congress is expected to assemble in Hawaii as guests of the Union and later in that year a Pan-Pacific Ethical Conference will be held under the auspices of the Union.

A Pan-Pacific Press Congress and a Pan-Pacific Entomological Congress are in process of organization.

The first Pan-Pacific Scientific Conference was called by the Pan-Pacific Union, convening in Honolulu in 1920, the second by the National Research Council of Australia, convening in Melbourne and Sydney in 1923. The third is being called by the National Research Council of Japan with the financial backing of the Imperial Government and the cooperation of the Pan-Pacific Association of Japan. At the First Pan-Pacific Food Conservation Conference strong resolutions were unanimously adopted urging every cooperation in making the Japan scientific gathering a great success in October, 1926.

Other Pan-Pacific gatherings are being planned and announcements will be made in the Bulletin of the Union from time to time.